

REPLACED BY  
ART 34 AMDT

requested to either increase or decrease its output power with some specific interval, relative to its current output power. Most often, both the uplink and downlink transmit powers are controlled by the network. The mobile station  
5 must obey commands for the uplink traffic. On the other hand, for systems where the mobile station transmits downlink power control commands, the network may choose to ignore them.

Traditionally speech coders in mobile communication systems  
10 have been fixed rate coders. That is, the bit rate of the data stream that conveys the speech information is fixed, and so is the amount of redundancy added for channel error protection. A compromise has to be made between the quality of the speech service, the gross bit rate of the radio  
15 channel and the degree of channel error protection: On one hand, maximum speech quality requires a high source bit rate and a high gross bit rate. On the other hand, the system resources are limited and the system should be able to accommodate a very large number of users at any given time.  
20 This means that the gross bit rate should be kept low, and that the speech service should be robust with respect to interference, which implies heavy channel coding.

The new Adaptive Multi-Rate (AMR) speech coding system for GSM overcomes the described problem by being adaptive both  
25 with respect to the source bit rate, by adapting the speech coder bit rate, and also with respect to the gross or channel bit rate by adapting between the full rate and half rate traffic channel. For an AMR coder example with 3 modes, the AMR code mode with the highest source bit rate, and thus  
30 the highest speech quality under error-free conditions is mode 3, while modes 2 and 1 have lower source bit rates and correspondingly lower quality under error-free conditions.

Accordingly, it would be highly desirable to provide a power control that uses the new Adaptive Multi-Rate (AMR) coder to